

REMARKS

Claims 4, 6-7, 9-10, 12-18 and 34 are pending with entry of this paper.

Claims 1-3, 5, 9, 11, 19-33 and 35-37 were cancelled without prejudice in a previous paper.

Claims 4, 6, 9-10 and 12 have been amended to clarify the claimed subject matter and correct typographical errors.

Rejection under 35 U.S.C. § 112

On page 2 of the Action, the Office rejected Claim 12 under 35 U.S.C. § 112, second paragraph as being indefinite for failing to particularly point out and distinctly claim the subject matter which application regards as the invention. Applicant has amended Claim 12 to correct a typographical error. Reconsideration and withdrawal of the rejection of Claim 12 under 35 U.S.C. § 112 is respectfully solicited.

Claim Objections

On page 2 of the Action, the Office objected to Claim 6 because of an informality. Claim 6 has been amended to correct a typographical error. Reconsideration and withdrawal of the objection to Claim 6 is respectfully solicited.

Rejection under 35 U.S.C. § 103(a)

On pages 3-5 of the Action, the Office improperly rejected Claims 4, 9, 10, 12-18 and 34 under 35 U.S.C. § 103(a) as being unpatentable over Gottschlich in view of

MacPhail and Morariu¹. On pages 5-7 of the Action, the Office improperly rejected Claims 6 and 7 under 35 U.S.C. § 103(a) as being unpatentable over Gottschlich in view of MacPhail, Doner and Vu. Applicant submits that Gottschlich in view of MacPhail and Morariu fail to teach, disclose or suggest the claimed subject matter of Claims 4, 9, 10, 12-18 and 34 and that Gottschlich in view of MacPhail, Doner and Vu fail to teach, disclose or suggest the claimed subject matter of Claims 6 and 7 under 35 U.S.C. § 103(a). Applicant respectfully requests reconsideration and withdrawal of the rejection of Claims 4, 6-7, 9-10, 12-18 and 34.

1. Background

Applicant's claimed subject matter generally relates to the coordination of the movement of trains from one planning area to another. The claimed subject matter partitions a global rail network into a plurality of planning areas where each planning area shares at least one resource, that is, a boundary element. Boundary elements are selected as a function of the configuration of the track elements which are common to adjacent planning areas and takes into account suitable factors, such as the miles of track, track complexity and anticipated traffic in the planning area. *See* paragraph [0019] of the published application. Control of each planning area is independent of the other, that is, a local planning agent ("LPA") is assigned to each planning area. Each LPA independently generates a local movement plan ("LMP") to control the movement of the trains in the

¹ The rejection of Claims 4, 9, 10, 12-18 and 34 on page 3 of the Action is stated as premised upon Gottschlich and MacPhail; however, the substance of the rejection also relies upon Morariu. In good faith Applicant will address the substance of the rejection in this paper.

respective local planning area. *Each LPA operates independently and asynchronously from all other LPAs.* Adjacent LPAs provide their respective LMPs to a computer processor based local coordinating agent (“LCA”) which manages movement order constraints for the boundary element, that is, the sequence of the trains and the ranges of times of arrival and departure for the trains through the boundary element. Therefore, each LPA controls the movement of trains in its respective local planning area, however, each LPA is constrained to maintain the order of arrival and departure of trains through a boundary element that is determined by the LCA. See paragraph [0020] of the published application.

The LCA reviews each LMP and identifies planned usage of the boundary element and the status of the trains planned movement. If a conflict between the usage of the boundary element is detected, the LCA resolves any conflict in the LMPs for the LPA. Thus, as each boundary element appears in two LPAs, the trains that operate in both LPAs must be coordinated at the boundary element. For example, for any given update to a LMP by one LPA, the occupancy times of a train in the boundary element used for a common track may not necessarily coincide with the boundary element occupancy times of the same train set by the LMP of an adjacent LPA, because each LPA operates independently and asynchronously with respect to the other LPAs. Therefore, an LCA coordinates the boundary element usage by the train to compile a correct estimate of the boundary element usage. See paragraphs [0021]-[0022] of the published application. **No such relationship is taught or suggested by any of the prior art of record, alone or in combination.**

2. Gottschlich

The Office's primary reference Gottschlich fails to disclose any of the claimed subject matter discussed above in detail, and the Office's reliance upon Gottschlich as the primary reference is misplaced. Gottschlich is generally directed to the *implementation of commands to railway vehicles from a dispatcher* rather than coordinating the movement of trains from one planning area to another. For example, the railway track system in Gottschlich is segmented into predetermined independent zones, each zone of which is controlled by an independently operating wayside controller ("WVC"). These *WVCs are trackside devices having microprocessors* and transceivers to allow receipt and transmission of commands from or to adjacent WVCs and/or dispatchers. The WVCs disclosed by Gottschlich are merely signaling devices on the track adaptable to receive communications and provide signals (e.g., lights, etc.) to a train conductor and to adjacent WVCs. *See* 1:15-20, 47-55; 2:5-9; 5:34-38. Therefore, each WVC and its respective zone provide no insight into an overall planning area or system; rather each WVC and zone is directed to the implementation of commands to trains in a respective zone.

The Office alleges that Gottschlich divides a network and global planning area into plural planning areas with each pair of adjacent planning areas sharing a common boundary element. *This assertion exhibits a fundamental misunderstanding of the reference.* As discussed above, Gottschlich is silent regarding planning areas. The zones disclosed in Gottschlich provide no information regarding the route of a respective train(s) or movement planning. Further, none of these zones and respective WVCs

provide any information about the rail network and movement plan as a whole; rather, the entire system of Gottschlich is directed to the implementation and forwarding of commands to trains in a respective zone between adjacent WVCs and dispatchers. Therefore, Applicant does not understand the Office's additional assertion that Gottschlich discloses developing a local movement plan for each planning area independently of the movement plan for other planning areas to control the movement of trains into and out of the selected boundary element associated with the planning area. Certainly, each WVC may monitor whether a train has passed into its respective zone and each WVC operates independently and asynchronously of the others (*See* 5:7-14); however, this operation of the WVCs in Gottschlich provides no input to a local planning area or any type of planning area. For at least these reasons, Applicant respectfully requests withdrawal of the Section 103 rejection.

3. MacPhail

The Office attempted to utilize a secondary reference, MacPhail, to supplement the deficiencies of Gottschlich, namely, the evaluation of local movement plans for adjacent planning areas. Again, it appears that the Office's reliance upon MacPhail is premised upon a misunderstanding of the teachings of the reference. MacPhail is explicit in its teachings, namely, MacPhail is directed to allowing the owner (*e.g.*, parent, rental company, etc.) of a vehicle to control the use of its vehicle by another party (*e.g.*, child, lessee, etc.). *See* paragraph [0009]. For example, MacPhail describes a hierarchical traffic control system having a primary (regional) controller 102 and several subsidiary (campus, parking, borough) controllers 104, 108, 123, 125. *See* paragraph [0036]. A

driver of a vehicle 106 may provide a trip plan. This trip plan is communicated directly to the primary controller or through a subsidiary controller to the primary controller to inform the primary controller of traffic in a respective area and the driver's proposed trip plan. The primary controller will then, as a function of actual and projected traffic along the driver's route, communicate back to the driver of the vehicle a best path along the trip plan. *See* paragraphs [0036]-[0038].

Contrary to the claimed subject matter, however, MacPhail is completely silent with regard to evaluating movement plans and resolving conflicts at the boundaries of planning areas. Rather, MacPhail provides a clear teaching of receiving traffic information from multiple sources (the subsidiary controllers and trip plans from drivers) and communicating revised trip plans to drivers as a function of the received traffic information. While it appears that MacPhail does disclose evaluating trip plans for one or more cars in a region (*see* paragraph [0038]), the trip plan communicated from the primary controller back to the driver of a car is based on the flow of traffic in the respective region (*Id.*) rather than as a function of boundary elements between controllers (*see* paragraphs [0037]-[0038]). Therefore, Applicant respectfully submits that one of ordinary skill in the art would not combine Gottschlich and MacPhail to teach any of the claimed subject matter. For at least these reasons, Applicant respectfully requests withdrawal of the Section 103 rejection.

4. Morariu

Morariu was cited by the Office to supplement the deficiencies of Gottschlich and MacPhail with regard to dividing a network into planning areas as a function of the

amount of traffic (Claim 4), assigning a business function to each of the trains in a planning area (Claim 9), and wherein the size of a planning area is a function of the amount of traffic and/or track (Claim 17). Applicant does not understand the Office's use of Morariu. For example, Morariu was previously utilized by the Office in the first Action for the subject application for teaching several of the same elements and Applicant traversed such rejections.

Morariu discloses a Dynamic Optimizing Traffic Planner (DOTP) system that **“generates multiple solutions (movement plans) and recommends the “best” solution based on optimization criteria (objectives) against which it optimizes.”** (*see* 8:42-55, emphasis supplied). More specifically, Morariu discloses a method of generating optimized traffic movement plans. Morariu utilizes a first set of traffic conditions 106 to create a first planning boundary 74 for a region and generates a first set of traffic movement plans 87 therefrom. Morariu selects one movement plan as an optimized traffic movement plan 4 and executes this plan to control traffic for the region. Current traffic conditions are determined and utilized to create a second set of traffic movement plans 87'. Similarly, one of these movement plans is selected to be a second optimized traffic movement plan 4' which is provided for controlling traffic in the region. *See* 14:20-45. This process may then be repeated and as traffic conditions change, additional plans are generated and implemented.

As discussed above, it is also clear that Morariu fails to disclose selecting the boundaries as a function of the portions of the network of track which is common to adjacent planning areas. For example, Morariu defines a “reservation” as planned usage

of a track, which is further described as a time interval beginning when the first part of a train enters a particular track section, and ending when the last part of the train exits the particular track section. Morariu further discloses that a number of reservations make up a movement plan. There is, however, no disclosure in Morariu regarding the boundaries of a planning area being selected as a function of the portions of the network of track common to adjacent planning areas.

For at least the reasons discussed above, the Office has failed to properly establish a *prima facie* case of obviousness. In particular, the rejection fails to describe any suggestion or motivation to modify the primary reference Gottschlich, which does not itself teach or suggest Applicant's claimed features as asserted by the Office. It is respectfully requested that the rejection of Claims 4, 9-10, 12-18 and 34 be reconsidered and withdrawn.

As the rejection of Claims 6 and 7 are also premised upon Gottschlich and MacPhail, the Office has failed to provide references that render unpatentable the claimed subject matter thereof for the reasons stated above. Withdrawal of the rejection of Claims 6 and 7 under 35 U.S.C. § 103(a) is hereby solicited.

Conclusion

Applicant believes that the present application is in condition for allowance and, as such, it is earnestly requested that Claims 4, 6-7, 9-10, 12-18 and 34 be allowed to issue in a U.S. Patent.

If the Examiner believes that an in-person or telephonic interview with the Applicant's representatives will expedite the prosecution of the subject patent application, the Examiner is invited to contact the undersigned agents of record.

The Office is requested and hereby authorized to charge the appropriate extension-of-time fees against **Deposit Account No. 04-1679** to Duane Morris LLP.

Respectfully submitted,

/pdm/

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